GEOGRAPHIC SCHOOL BULLETINS

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VOLUME 37, NUMBER 19, FEBRUARY 23, 1959 . . . *To Know This World, Its Life*

- Martinique
- Skeletons of the Sea
- Slow-footed Snail
- Swiss Festival
- Cape Hatteras

NEXT WEEK—*Quebec, Canada's French-speaking province . . . mysterious Tibet . . . early wildflowers of spring.*

CHARLES ALLMON, NATIONAL GEOGRAPHIC STAFF

PLANTER'S DAY in Fort de France, Martinique, brings smiling farm women to the bustling market to sell their wares. They easily balance up to 60 pounds of pineapples, bananas, oranges, breadfruit, and tomatoes on their heads.

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30,000 residents. The only known survivor was a criminal protected by the thick stone walls of the jail.

A volcanological museum displays twisted watches with their hands eternally reading a few minutes before eight, nails fused together by the extreme heat, and distorted bottles still containing liquid.

A ghost town compared with its former eminence as the financial and cultural hub of Martinique, St. Pierre now counts only one-fifth its former population. A pineapple canning factory has opened, and a new pier is under construction to attract trade, but gray rubble from the blasted city still weathers in the tropical sun.

Near-by Le Carbet proudly claims that Columbus slept there. On his fourth voyage to the Western Hemisphere, in 1502, the explorer put in for water and a three-day rest.

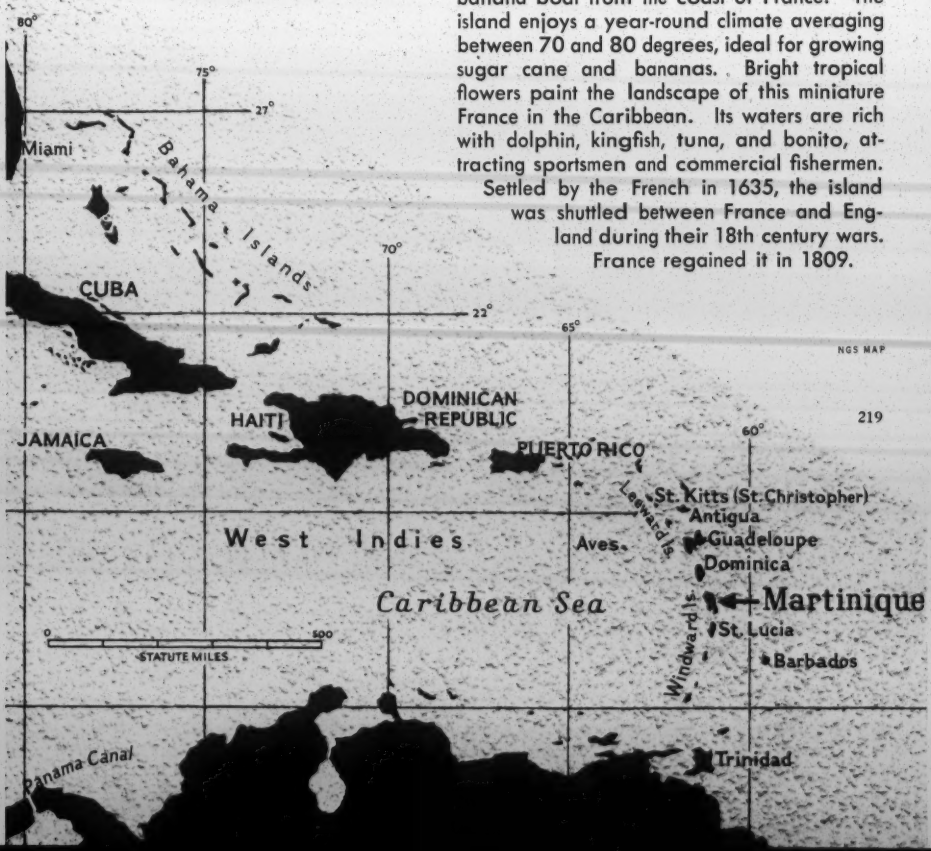
More than a century later colonists sailed in Columbus's wake. They were French—peasants and younger sons of aristocrats—followed by slaves from Africa and Asia. (Slavery was abolished in 1848.)

The first settlers found Martinque an Indian stronghold—the home of the Caribs. This savage tribe had expelled the Arawaks who had lived in the island for 1,000 years. The Caribs all but died off under pressure of the European invasion. Only about 100 survive today. They live on a reservation on the island of Dominica, one of the British West Indies.

Confronted with the tropical lushness of Martinique, the French settlers chose the obvious occupation, farming, and the obvious crop, tobacco. But they soon sated the market, and sugar cane supplanted tobacco.

Today, plantations on the plains around

FRENCH LINK IN THE CARIBBEAN CHAIN



TROPICAL PARADISE: Martinique, a French department in the West Indies, lies 10 days by banana boat from the coast of France. The island enjoys a year-round climate averaging between 70 and 80 degrees, ideal for growing sugar cane and bananas. Bright tropical flowers paint the landscape of this miniature France in the Caribbean. Its waters are rich with dolphin, kingfish, tuna, and bonito, attracting sportsmen and commercial fishermen. Settled by the French in 1635, the island was shuttled between France and England during their 18th century wars. France regained it in 1809.

CHARLES ALLMON, NATIONAL GEOGRAPHIC STAFF

MARTINIQUE, France's Caribbean Orchid

ROBUST FISHERMEN push for the ocean from Martinique, a French island in the Caribbean whose very name stirs the imagination with dreams of an unspoiled tropical paradise. Northern minds envision colorful natives pursuing simple tasks—an image faithfully recorded in the photograph above.

The French touch adds to this concept. These boat crews shout to each other in a patois incomprehensible to a Parisian, but based on the official language of the island: French. The fishermen sell their flying fish, redfish, dolphin, or kingfish for francs.

A colony for more than 300 years, Martinique gained the French equivalent of statehood on January 1, 1948. French names stud the jagged mountains and fertile valleys where citrus trees and red bougainvillea grow in many yards and tree ferns shoot up to 20-foot heights. In the rain forest, the ground is so fertile that a signpost took root and sprouted leaves.

Boasting one of the best harbors in the West Indies, Fort de France, Martinique's capital, is the island's first city, with a population of 45,000. Sidewalk cafés lend a Parisian air. Bereted bicyclists compete with French cars in the narrow streets. A statue of Napoleon's empress, Josephine, stands in the public square. She was born in Martinique, the daughter of a sugar planter.

From Fort de France ships laden with sugar, rum, bananas, pineapples, and cacao beans sail for France.

The city of St. Pierre, founded in 1635, achieved international fame in 1902 when Mount Pelée, a near-by volcano, erupted, causing one of the worst catastrophes in the Western Hemisphere. In three minutes superheated gas killed all but one of the

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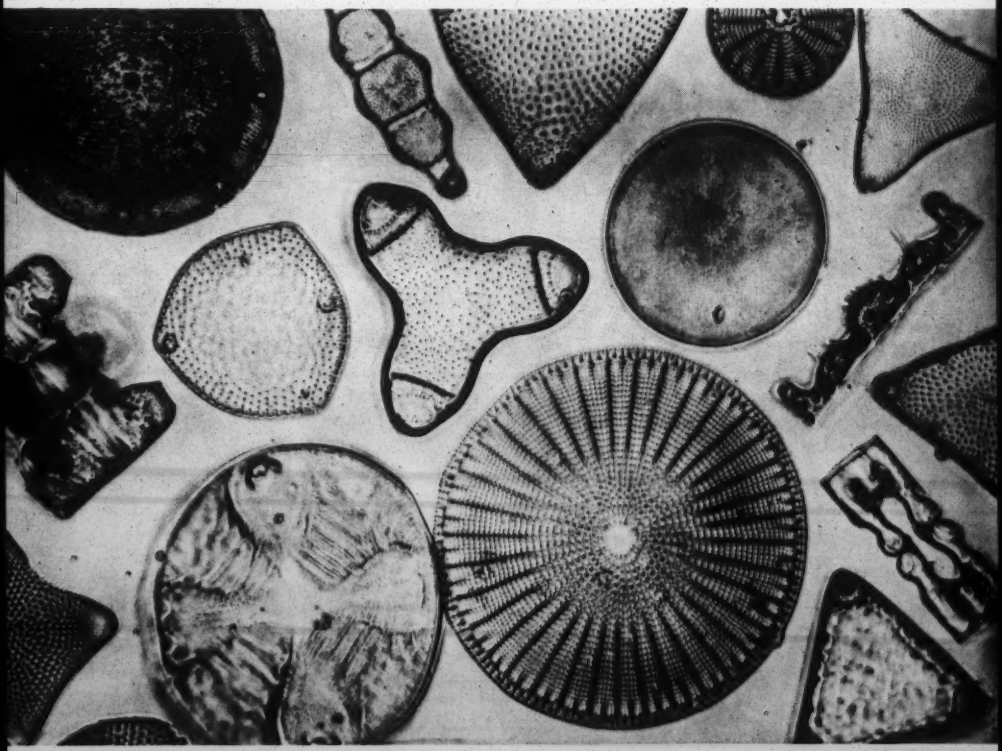
Tiny Skeletons From the Sea

IN ORDINARY-SEEMING FLECKS of dust the microscope reveals crystal beauty —and man finds a hard-working partner.

The snowflake-like shapes (below) are diatoms, the skeletons of one-celled plants that flourished eons ago. Though you may never have heard of them, they are important in your daily life. When you dip into a bowl of clean sugar, when you follow a white line down the center of a road, when you read a book, get a polio "shot," or paint your room, unseen diatoms are helping.

The diatoms most useful to man are those left in vast deposits in ancient sea and lake bottoms. For millions of years the plants multiplied. In theory, a single one could produce 10,000,000,000 offspring a month. When each died, its shell settled to the bottom. After centuries deposits heaped many feet deep.



W. FAITOUTE MUNN

Then earth pressures lifted the deposits to become dry land. Overlying layers of lava or soil compressed the diatoms into a light, strong, porous rock called diatomite.

The Nobel Prizes are one result of diatomite's ability to soak up liquid. Albert Nobel, seeking a way to make the dangerous explosive nitroglycerine safer to handle, poured it into diatomite—and invented dynamite. He willed the fortune dynamite brought to establish his prizes.

The chief use of diatoms today is to filter. Cakes of diatomite act as strainers to purify many products, even filter bacteria from vaccines.

Diatom's light-diffusing properties are valuable in paint for highway and home. In paper, they add thickness and smoothness, important in printing. F. S.

CHARLES ALLMON, NATIONAL GEOGRAPHIC STAFF

Le Lamentin, Martinique's third largest city, make the island a sugar bowl for France. Seventy-five percent of the crop goes to sugar factories, the earliest constructed in 1850.

The remaining 25 percent reaches 32 rum distilleries on the island. The beverage is so plentiful that during the fuel shortage of World War II, islanders powered their automobiles on a blend of gasoline and rum.

Second to sugar cane on Martinique is the banana. A good year sees exports of 93,000 tons.

Efforts to add breadfruit to West Indian economy brought about an epic adventure of the sea—the mutiny on the *Bounty* in 1789. The purpose of the *Bounty*'s voyage was to transplant breadfruit from the South Pacific islands.

Captain William Bligh, victim of the mutiny, and 18 loyal men, rowed a small boat 3,618 miles to land, while the mutineers sailed to Tahiti and easy living. Bligh later commanded a second vessel laden with breadfruit for the islands. It now flourishes on Martinique.

If Martinique imports crops, it also exports them. The island gave Brazil its coffee industry. In the early 18th century, a Martinique army captain visiting Louis XIV of France brought back a coffee plant from the royal greenhouse. The wife of the governor of French Guiana received a few seedlings from the soldier's plant. She gave them to a Brazilian diplomat, and the South American coffee industry was born.

Paradoxically, the demand for sugar and bananas surpasses the demand for Martinique coffee, and production has nearly stopped.

The 20th century creeps up on the island slowly. Few islanders still live in thatched-roofed huts. But native women cling to their custom of carrying their packages on their heads, although most have given up traditional dress.

Time was when a man could tell with a glance at a woman's madras—a bandana-type hat—what his chances might be. If a single corner showed, her heart was free. Two or three corners indicated she was taken. All four said, "I'm looking for a husband."

A cotton dress and a straw hat are more common attire today. But many older Negro women still wear the colorful island garb.

On the plantation a jeep might carry the owner from field to field, but the overseer directs his barefoot workers from horseback or on foot. They slash down the sugar cane with gleaming machetes, bundle it, and head-load it to carts. Yoked bullocks haul the cane to the crushing mill (above).

The friendliness of the island's people and its tropical splendor, haunt visitors' minds. Their attraction has earned the name *L'Île des Revenants*—The Island of Those Who Return. L. B.

NATIONAL GEOGRAPHIC PHOTOGRAPHER JOSEPH BAYLOR ROBERTS

THE SNAIL makes a little water go a long way. When caught by a dry spell, it retreats like a hermit into its colorful, twirled shell. In retracting its elongated foot, it closes its own front door. On the side of the foot is a disc which fits neatly over the opening in the shell. It excretes a substance which, like weather proofing, seals the crack. Thus closeted, it continues to breathe through a small orifice in the shell. When rains return, Mr. Snail can get under way again. Its glands require moisture to secrete the familiar slimy roadway that enables it to resume its travels.

SNAILS have proved their usefulness to man. The Romans admired the little animal both as a dinner appetizer and for its coloring properties. The people of Tyre at the eastern end of the Mediterranean crushed the *murex* snail and extracted its purple dye. Production of Tyrian purple became a thriving industry—until a law was passed restricting the wearing of purple to the Imperial family.

Today synthetic dyes replace the snail's natural colors. But gourmets around the world have taken up the slack. The Formosan tribesman (left) boils his island's plentiful African snails into a stew. In France, snail gardens dot the countryside. Boxes of snails are deposited at Paris restaurants (below). Patrons extract the snail from its shell, dip it into a butter-and-garlic sauce, eat it like a clam.

Californians prize yet another snail, the abalone. Beneath its iridescent pearly shell the abalone hides a toothsome flavor. But to get abalone for dinner usually takes a struggle. If disturbed, this mollusk contracts its foot, tightening its grip on a seaside rock. It becomes almost impossible for one man, even armed with a crowbar, to pry it off. A.P.M.

JUSTIN LOCKE

PHOTOGRAPHS BY NATIONAL GEOGRAPHIC PHOTOGRAPHER JOSEPH BAYLOR ROBERTS

FORMOSA'S farmers wouldn't give you a Taiwan five-cent note for a whole bushel of these Giant African snails (above). These pests chew vegetables, flowers, fruits. Over a century, this destructive snail spread like a plague through Asia. The Japanese took it along for food when they occupied Pacific islands during World War II. Kept under control by its natural enemies in Africa, it multiplies wildly elsewhere. Alert inspectors have succeeded in barring this variety from the United States.

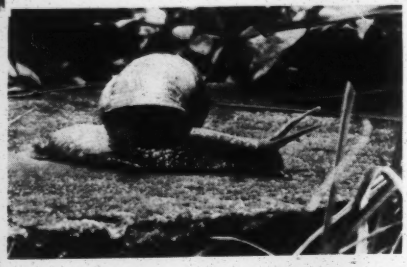
Well-Housed Mr. Snail

IT'S HARD TO BE NEUTRAL about the snail. To the French gourmet, it is the delectable *escargot*. To lemon growers in California, it is a pest that gnaws leaves off their trees. To ancient Romans, it was the source of a coveted purple dye.

Snails, with their cousins the slug, limpet, whelk, periwinkle, sea hare, and coat-of-mail shell, are the most highly developed of the mollusks—and the most widespread. Smithsonian Institution biologists list 80,000 species of snails alone. Snails swim, jump, crawl, and burrow. They live at the bottom of the sea and in the tops of trees. They range in size from the horse conch of Florida, two feet long, to creatures the size of a grain of sugar.

Like a blind man carrying his home on his back, the snail gropes along. Instead of a cane, it uses sensitive tentacles. Weak eyes at the tips of its tentacles help. But a better warning device is the snail's well-developed sense of smell.

PAUL A. ZAHL, NGS STAFF



UNHAMPERED by the snail's shell, the slug (above) has the rudiments of a shell hidden within it. Like its cousin, the slug is a vegetarian, rasping its food across its tiny, sharp teeth.

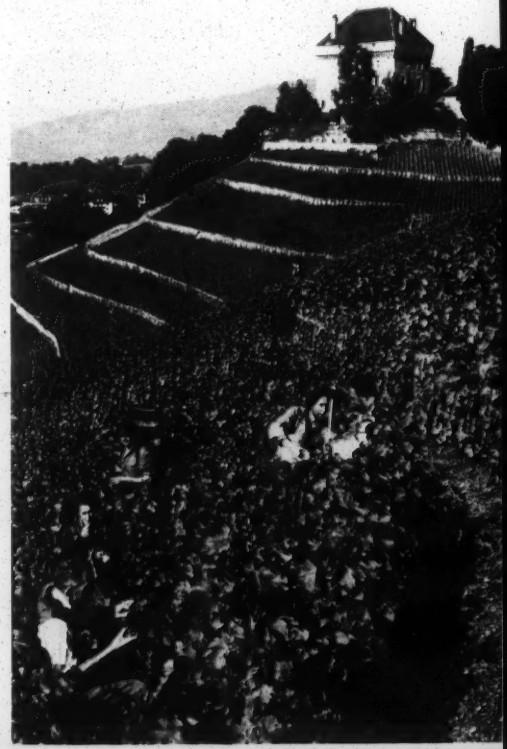
Gaiety runs so high even the oxen wear flowers (above).

The Confrérie des Vignerons—an association for the improvement and exploitation of the vines of Vaud—sponsors the spectacle.

In 1955, year of the last Fête des Vignerons, the Confrérie contributed part of the money—$100,000. Donations rolled in from nearly everyone in the Canton—business people, government bodies, and private citizens. Local banks advanced the rest. The production cost more than $1,000,000.

The festival committee needs six months to hire writers, composers, and producers for a three-hour pageant.

The cast—featured singers and dancers from all over Europe, supported by local performers—rehearses for a year. The committee pays half the cost of the costumes—up to $25 apiece. But the pageant, for all its fun, is serious work to the people of Vevey. Many of them spend $100 and more to create beautiful costumes, copies of typical Vaudois dress of 100 years ago (below).



Presided over by Bacchus, god of wine, the pageant praises in song, dance, and story the cultivation of the grape through the four seasons. In 1955 nearly 4,000 performers, including hundreds of gay children, presented the pageant to 11 capacity audiences. The vinegrowers, whose tiered vineyards (above) climb the sunny slopes outside the towns of Vaud, are crowned with gilded grape leaves.

No one knows exactly when the people of Vevey held their first Thanksgiving. A fire destroyed the records of the Confrérie in the 16th century. But local historians say the citizenry of the area staged some type of harvest festival as early as the 12th century.

The first organized fete dates back to 1819. Every celebration since then has worn added beauty and importance.

When the hectic two weeks end, the people of Vevey sit back, exhausted but happy, and resume their normal wine and tourist trade. They wait for their children to take on the job. L. B.

Festival Honors Vevey's Vineyards

ONCE EVERY GENERATION the people of Vevey, a little Swiss town beside the Lake of Geneva, break routine and stage a Thanksgiving festival that makes New York's famous Macy parade look like an amateur production.

For two weeks in August they honor the *vignerons* (vinegrowers) of their Canton, Vaud, whose grapes have made the local wines famous. No one planned the fete to attract tourists. It just does.

The people put on such a lavish celebration that they can afford it only four or five times a century. A stadium to seat 15,000 goes up in the market place (below). Banners and flags line the streets. Grapes festoon the town. Paper-mâché grapes dress trees and buildings. Vinegrowers deck their tall hats with grape leaves.

PHOTOGRAPHS BY JEAN AND FRANC SHOR, NATIONAL GEOGRAPHIC STAFF

Sound from Ocracoke, the first English colony in America was attempted. Here, in 1587, Virginia Dare was born —the first child of English parentage in America.

That much is known, but the final fate of the colony is as mysterious as that of the *Carroll Deering*'s crew.

A relief squadron was to be sent to supply the colony from England, but Sir Walter Raleigh, backer of the colony, and Queen Elizabeth I were fully occupied fighting the Spanish Armada. Three years passed before help arrived.

The expedition found no one at home. The colonists had disappeared completely, leaving but a single clue, the word *CROATOAN* carved on a tree. It told the rescuers little, and the colony's fate remains unknown.

These events are brought to life each summer in costume and grease paint with a production of Paul Green's drama, *The Lost Colony*.

Islanders, college students, and professional actors present the play in an open-air theatre overlooking Roanoke Sound.

In the scene above, Sir Walter Raleigh (left) presents to his Queen two Indian chiefs, Manteo and Wanchese, who brought to England the "humble root" (potato) and tobacco. The two towns of Roanoke Island are named for these Indians.

JOHN E. FLETCHER, NATIONAL GEOGRAPHIC STAFF

Other special events are staged for visitors, including the Dare Coast Pirates Jamboree, held each year toward the end of April. Features include a fish fry, street dancing, crowning of pirate royalty, and boat, jeep, and pony races. The Banks' Boy Scout troop is mounted on wild ponies captured along the dunes (below).

The growth of these descendants of

NATIONAL GEOGRAPHIC PHOTOGRAPHER JOSEPH BAYLOR ROBERTS

NATIONAL GEOGRAPHIC PHOTOGRAPHER JOSEPH BAYLOR ROBERTS

Cape Hatteras Leads Double Life

THE SANDS OF NORTH CAROlina's Outer Banks blow aside, revealing the sere and shattered ribs of a once-proud ship. Little is left except broken bones and a pulley block to delight beachcombing vacationists.

These two themes, the harshness of the elements and the pleasure of visitors, sum up the Banks.

On the map, the Banks resemble a pencil line arching into the Atlantic. Formed by a struggle between the Gulf Stream and the Atlantic Ocean, with the wind as referee, this chain of islands has a long, salt-drenched story.

The latest chapter was written last year, when the National Park Service dedicated an 80-mile stretch of surf, dune, and beach as the Cape Hatteras National Seashore Recreational Area.

New tourist facilities—museums and sun shelters—have been built for the ever-growing numbers who want to visit the Banks.

Beachcombing is a prime attraction. Along these shifting sands lie the wrecks of hundreds of vessels, from colonial galleons to Civil War ironclads and sub-sunk World War II tankers. In 400 years, by conservative estimate, some 2,200 craft have wrecked near Hatteras, where warring waters shift shoals and sand bars, throwing reefs into channels, tricking schooner and steamer to disaster.

Each autumn after the last bright beach umbrella is folded and the last sun tan returned to school or office, the Bankers, as residents term themselves, fold shutters against the savage storms.

Then towering gray waves, derelict ships, and lonely Coast Guard stations remind poignantly of man's ancient embroilment with the sea.

Among the sea tales Bankers spin around their driftwood fires, one of the most mysterious concerns the five-masted schooner *Carroll A. Deering*. She was found stranded off Hatteras on the treacherous Diamond Shoals—"Graveyard of the Atlantic"—in 1921. Food waited in the galley pots, the ship's cat mewed a welcome to rescuers, but nobody was aboard. No one knows to this day what happened to crew and passengers.

Through the Banks have paraded some of history's most romantic figures. Tiring of water sport, a visitor can search for pirate treasure. Edward "Blackbeard" Teach made his lair on Ocracoke Island until a Virginia expedition killed him in 1718.

On Roanoke Island, across Pamlico

PHOTOGRAPHS BY NATIONAL GEOGRAPHIC PHOTOGRAPHER JOSEPH BAYLOR ROBERTS

shipwrecked horses has been stunted over the generations by the sparce food supply.

It was in this area of clashing elements that man first learned to master the air. At Kitty Hawk, north of Nags Head, a pair of dedicated brothers, Wilbur and Orville Wright, finally pushed their flying contraption into the air on December 17, 1903. Visitors today see a tall granite monument on Kill Devil Hill, and a painstaking replica of their workshop, complete to the period labels on the canned goods.

For some, history just fills the time when the fish aren't biting. The Banks offer both fresh and salt water sport, with the channel bass in spring and fall running so densely their reflected color turns the blue ocean a reddish-brown.

Surfcasters gather near candy-striped Cape Hatteras Light, tallest in the United States, to try their luck (above). In fresh water, bass are the lure.

In the neat, white villages along the Banks almost every house displays some souvenir of the sea. Many were built of stout timbers salvaged from wrecked ships. Coal, rum, and other supplies often come in on the wake of a storm.

Cast-up buoys, life preserver rings, and whale bones decorate lawns. One retired fisherman grafted the bow of an outworn boat onto his house. Mrs. Fisherman uses it as a kitchen, portholes and all.

Sea wrack covers the beaches after storms, with layers of shells for both amateur and professional beachcombers.

Many visitors, after a sunny session by the seaside, take home conch shells.

Later, like Peggy Harrell, of Hertford, North Carolina (below), they can put their prizes to their ears and hear the echo of the eternal surf roughly caressing the Outer Banks. F. S.

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